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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,518	02/25/2002	Yoshitomo Tokumoto	1560-0377P	2026

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EXAMINER	
DAVIS, OCTAVIA L	

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/081,518	TOKUMOTO ET AL.	
	Examiner	Art Unit	
	Octavia Davis	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-38,42,43,48 and 49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-38,42,43,48 and 49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/13/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors because it contains more than 20 pages. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 35 – 37, 42, 43, 48 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Goetz et al.

Regarding claims 35 and 36, Goetz et al disclose a position determining apparatus comprising means 22 for detecting a position of a target 12 and outputting a detection signal according to the detected position (See Col. 4, lines 29 – 36), a rotational member 62 on which said target is provided so that the detection signal changes according to a rotation (See Col. 5, lines 36 – 48) and angle calculating means 84 for calculating a rotational angle of said rotational member based on the detection signal multiplied by a gain, means 84 being programmable to periodically scan the outputs of the detection means, calculating a ratio of the output signals,

selecting and applying an appropriate correction factor, and adding an appropriate offset value to obtain the position of the magnet (See Cols. 5 and 6, lines 55 – 67 and 1 – 11).

Regarding claim 37, a distance between the target 12 and the detecting means 22 changes according to a rotation (See Cols. 4 – 6, lines 34 – 36, 36- 49 and 12 – 25).

Regarding claim 42, the detecting means 22 includes a plurality of detecting means (See Col. 4, lines 30 – 34, See Fig. 6A).

Regarding claim 43, a first judging means judges whether or not each of the detection signals of said first detecting means and second detecting means is higher than a first threshold greater than a detection signal value obtained when detection signal waveforms of said first detecting means and second detecting means cross each other, a second judging means judges whether or not each of the detection signals of said first detecting means and the second detecting means is lower than a second threshold smaller than a detection signal value obtained when the detection signal waveforms of said first detecting means and the second detecting means cross each other and a third judging means judges whether or not the detection signal waveforms of said first detecting means and second detecting means cross each other, wherein the maximum value and minimum value of said detection signal are detected based on results of judgments made by said first, second and third judging means (See Col. 7, lines 3 – 7 and 54 – 65, Col. 8, lines 1 – 24 and 37 – 60, See Figs. 12 and 13).

Regarding claim 48, offset correcting means 84 is provided for correcting the detection signal so that the calculated average value equal to a preset reference average value (See Col. 6, lines 11 – 12 and 66 – 67 and Col. 7, lines 1 – 7).

Regarding claim 49, means 84 calculates a difference between the calculated average value and the reference average value, wherein said offset correcting means adds said difference to said detection signal value so that the calculated difference becomes zero (See Col. 9, lines 12 – 29).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goetz et al in view of Eguchi et al.

Regarding claim 38, Goetz et al disclose all of the limitations of these claims except for a teaching that the target is made of protrusions provided at substantially equal intervals in a circumferential direction of said rotational member. However, Eguchi et al disclose a rotational angle detecting apparatus comprising a magnetic position sensor 22 for detecting a position of a target 16 which is formed of protrusions 15a, 15b (See Col. 2, lines 25 – 49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Goetz et al according to the teachings of Eguchi et al for the purpose of, providing an improved rotational angle detecting apparatus that greatly simplifies the mounting of the apparatus to an object to be measured and that ensures greater reliability against aging and vibrations (See Eguchi et al, Col. 1, lines 41 – 47).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wada (5,369.361) teaches a position detecting device of magnetic detection type capable of accurate position detection.

Allwine (6,124,709) teaches a magnetic position sensor assembly for sensing the position of rotating objects.

Luetzow (5,444,369) teaches a rotary shaft position sensor with improved output linearity.

Wolf et al (5,497,081) teach an angular position sensor for sensing the angular position of a pivotally mounted device.

Oudet et al (5,789,917) teach a magnetic position sensor with a Hall probe.

Apel et al (6,201,389) teach a rotation angle sensor for determining the angular position of a rotating shaft.

7. Any inquiry concerning this communication should be directed to examiner Octavia Davis at telephone number (571) 272 - 2176. The examiner can normally be reached on Monday - Thursdays (9:00 - 5:00), Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on (571) 272 - 2180. The fax phone number for the organization where this application where this application or proceeding is assigned is (703) 872 – 9306.

OD/2855

7/8/04

EDWARD LEFKOWITZ
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